

80/579692

AP20 Rec'd PCT/PTO 16 MAY 2006

Gist of IPER (PCT/IPEA/416 and 409, dated December 21, 2005  
for PCT/EP2004/052889:

2. This report includes a total of five pages,  
including this cover page.

[X] There are also enclosures with the report, which  
are sheets with descriptions, claims and/or drawings that  
have been amended and made the basis of this report, and/or  
sheets with corrections made before this panel (see Rule  
70.16 and Section 607 of the Administration Guidelines for  
PCT).

These enclosures include a total of three pages.

3. This report includes information on the following  
items:

I. [X] Basis of the report

V. [X] Reasoned statement under Rule 66.2a(ii) as to  
novelty, inventive step and industrial applicability;  
citations and explanations in support of this statement

I. Basis of the report

Specification pages

1-15 as originally filed

Claims

11, 12 as originally filed

1-10 received September 19, 2005 with the letter dated  
September 15, 2005

Drawings, sheets

1/4-4/4 as originally filed

V. Reasoned statement under Article 35(2)...

1. Novelty Yes: claims 1-10

Inventive step Yes: claims 1-10

Industrial applicability Yes: claims 1-10

2. Citations and explanations:

See appended page

V. Reasoned statement ...

1. The following references are cited:

- 1) WO 03/055058 A (Bier, Guenther), July 3, 2003
- 2) WO 03/061117 A (ADB POLSKA SP; Tomasz Hanzlik (Polish nationality); Advanced Digital Broadcast LTD (T), July 24, 2003
- 3) US Patent 5,262,733 (Nakajima et al), November 16, 1993
- 4) US Patent 6,124,757 (Christopher Newey), September 26, 2000
- 5) J. Hancock: "A CLASS D AMPLIFIER USING MOSFETS WITH REDUCED MINORITY CARRIER LIFETIME", Journal

of

the Audio Engineering Society, Audio Engineering Society, New York, USA, Vol. 39, No. 9, September 1, 1991, pages 650-662, XP000226144, ISSN: 0004-7554

- 6) US Patent 5,559,467 (K. M. Smedley), September 24, 1996
- 7) S. Watanabe et al: "DSP-based high precision current tracking control of gradient coil in two-paralleled PWM amplifiers for MRI systems", Power Electronics Specialists Conference, 1998, PESC 98 Record. 29th Annual IEEE Fukuoka, Japan, May 17-22, 1998, New York, NY, USA, IEEE, USA, Vol. 1, May 17, 1998, pages 916-921, XP010294962, ISBN: 0-7803-4489-8

2. The present application meets the requirements of Article 33(1) PCT, because the subject of claims 1-10 is novel - Article 33(2) PCT - and is based on an inventive step in the sense of Article 33(3):

2.1 Class D amplifiers are often used as gradient amplifiers in magnetic resonance systems, as exemplified in reference 7.

Reference 7 does not disclose the claimed compensation for fluctuations in the supply voltage.

Moreover, references 1-6 all disclose the claimed principle of compensating for fluctuations in the supply voltage in Class D amplifiers, but do not do so for gradient amplifiers; instead, they do so in the field of audio output amplifiers.

The claims are therefore novel under Article 33(2) PCT.

2.2 Although it is generally known that Class D amplifiers for both of these applications are in principle constructed identically (except for the current, voltage and power level of the gradient amplifier, which is two orders of magnitude higher), there is no reason that could be argued along the lines of Article 33(3) PCT for why one skilled in the art would modify an audio amplifier of references 1-6 for use as a gradient amplifier, or - based on a gradient amplifier as in reference 7, for instance - would use the claimed compensation principle known from references 1-6.

The claims are therefore inventive under Article 33(3) PCT.

3. The subject claimed is industrially applicable; Article 33(4) PCT.